

## Abstract

The invention relates to a method for switching a plurality of packet-oriented signals, in particular for switching and  
5 routing in local area networks based on the Ethernet standard, in which a respective signal ( $S_{11}$  to  $S_{nN}$ ) can be supplied to a plurality ( $N$ ) of port units (3), which each have a predetermined number ( $n$ ) of ports (7), at one port, a plurality of ports or all the ports, and in which a signal ( $S_{11}$   
10 to  $S_{nN}$ ) is connected from a port (7) on a port unit (3) to a port (7) on another port unit (3) by means of a central switching unit (5) coupled to the port units, with signal transmission between the port units (7) and the central switching unit (5), and vice versa, being carried out in steps  
15 by the transmission of data blocks. Each port unit (3) ascertains the address information item for each data packet supplied to one of its ports (7) and uses this address information item to determine the port unit (3) to which the packet needs to be transmitted. Each port unit (3) stores the  
20 data packet as a whole, or segmented into a plurality of cells, in a buffer memory (9) associated with said port unit. Each port unit (3) compiles, at predetermined intervals of time, availability information (CRreq) which indicates to which of the other port units (3) at least one data packet or  
25 cell needs to be transmitted. The port units (3) transmit this availability information (CRreq) to the central switching unit

(5), the central switching unit (5) evaluating the availability information (CRreq) and using a prescribed specification to ascertain authorization information (CRgnt) which indicates from which port units (3) (transmitting port units) a respective data packet or cell can be transmitted to which other port unit (3) (receiving port units) in the next step or in a particular one of the next steps without blocking occurring. The central switching unit (5) transmits the authorization information (CRgnt) at least to the relevant transmitting port units (3), the transmitting port units (3) transmitting the particular released data packets or cells to the central switching unit (5), and the central switching unit (5) connecting the necessary paths between the transmitting port units (3) and the receiving port units (3) and transmitting the data packets or cells to the respective receiving port units (3) via the connected paths. The receiving port units (3) evaluate the address information in the received data packets or cells and assign the data packets or cells to the relevant ports (7). If necessary, the receiving port units recombine the cells received in a plurality of steps into data packets and output the data packets via the relevant ports (7). In addition, the invention relates to an apparatus for carrying out the method.

Fig. 1